? IMPORTANT INFORMATION KEEP FOR OPERATOR IMPORTANT INFORMATION ?

OPERATOR AND SERVICE MANUAL

Part Number 127731

OM/SM-EE(CE)
INTERNATIONAL

MODEL: EE - CE MARK
Steam Jacketed Kettle

Self-Contained
Electrically Heated
Floor Mounted
Stationary

KEEP THIS SUPPLEMENT WITH THE EE OPERATOR MANUAL. OPERATORS AND TECHNICIANS SHOULD READ, UNDERSTAND AND FOLLOW WARNINGS AND INSTRUCTIONS IN THIS SUPPLEMENT AND THE OPERATOR MANUAL.

GROEN®

Information contained in this document is known to be current and accurate at the time of printing/creation. Unified Brands recommends referencing our product line websites, unifiedbrands.net, for the most updated product information and specifications.

MADE IN USA™

IMPORTANT — READ FIRST — IMPORTANT

THESE APPLIANCES MUST BE INSTALLED BY A COMPETENT PERSON IN CONFORMITY WITH THE INSTALLATION AND SERVICING INSTRUCTIONS AND NATIONAL REGULATIONS IN FORCE AT THE TIME. PARTICULAR ATTENTION MUST BE PAID TO THE FOLLOWING:

I. E. E. REGULATIONS FOR ELECTRICAL INSTALLATIONS
ELECTRICITY AT WORK REGULATIONS
HEALTH AND SAFETY AT WORK ACT
FIRE PRECAUTIONS ACT
LOCAL AND NATIONAL BUILDING REGULATIONS

USERS SHOULD BE CONVERSANT WITH THE APPROPRIATE PROVISIONS OF THE FIRE PRECAUTIONS ACT. IN PARTICULAR THEY SHOULD BE AWARE OF THE NEED FOR REGULAR SERVICING BY A COMPETENT PERSON TO ENSURE THE CONTINUED SAFE AND EFFICIENT PERFORMANCE OF THE APPLIANCE.

WARNING: TO PREVENT SHOCKS, ALL APPLIANCES WHETHER GAS OR ELECTRIC, MUST BE EARTHED.

UPON COMPLETION OF THE INSTALLATION, THE OWNERS MANUAL SHOULD BE HANDED TO THE USERS AND THE INSTALLER SHOULD INSTRUCT THE RESPONSIBLE PERSON(S) IN THE CORRECT OPERATION AND MAINTENANCE OF THE APPLIANCE.

THIS EQUIPMENT IS ONLY FOR PROFESSIONAL USE, AND SHALL BE OPERATED BY QUALIFIED PERSONS. IT IS THE RESPONSIBILITY OF THE SUPERVISOR OR EQUIVALENT TO ENSURE THAT USERS WEAR SUITABLE PROTECTIVE CLOTHING AND TO DRAW ATTENTION TO THE FACT THAT, SOME PARTS WILL, BY NECESSITY, BECOME VERY HOT AND WILL CAUSE BURNS IF TOUCHED ACCIDENTALLY.

UNLESS OTHERWISE STATED, PARTS WHICH HAVE BEEN PROTECTED BY THE MANUFACTURER ARE NOT TO BE ADJUSTED BY THE INSTALLER.

BEFORE ATTEMPTING ANY SERVICING, ENSURE THAT THE ELECTRICAL SUPPLY IS DISCONNECTED.

WARNING: THE UNIT MUST BE INSTALLED BY PERSONNEL QUALIFIED TO WORK WITH ELECTRICITY AND PLUMBING. IMPROPER INSTALLATION CAN CAUSE INJURY TO PERSONNEL AND/OR DAMAGE TO THE EQUIPMENT. THE UNIT MUST BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES.

CAUTION: SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT.

WARNING: TO AVOID DAMAGE OR INJURY, FOLLOW THE WIRING DIAGRAM EXACTLY WHEN CONNECTING A UNIT.

WARNING: BEFORE CLEANING THE OUTSIDE OF THE KETTLE, DISCONNECT THE ELECTRIC POWER SUPPLY. KEEP WATER AND CLEANING SOLUTIONS OUT OF CONTROLS AND ELECTRICAL COMPONENTS. NEVER HOSE OR STEAM CLEAN ANY PART OF THE UNIT.

WARNING: CAREFULLY READ THE WARNINGS AND FOLLOW THE DIRECTIONS ON THE LABEL OF EACH CLEANING AGENT. USE SAFETY GLASSES AND RUBBER GLOVES AS RECOMMENDED.

NOTICE: DO NOT USE A CLEANING OR DE-LIMING AGENT THAT CONTAINS ANY SULFAMIC ACID OR ANY CHLORIDE, INCLUDING HYDROCHLORIC ACID. IF THE CHLORIDE CONTENT OF ANY PRODUCT IS UNCLEAR, CONSULT THE MANUFACTURER.

NOTICE: **DO NOT USE ANY DE-GREASER THAT CONTAINS POTASSIUM HYDROXIDE OR SODIUM HYDROXIDE OR THAT IS ALKALINE.**

WARNING: **USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY GROEN OR THEIR AUTHORIZED DISTRIBUTOR VOIDS ALL WARRANTIES AND CAN RESULT IN BODILY INJURY TO THE OPERATOR AND DAMAGE THE EQUIPMENT. SERVICE BY OTHER THAN FACTORY-AUTHORIZED PERSONNEL WILL VOID ALL WARRANTIES.**

WARNING: **HIGH VOLTAGE EXISTS INSIDE CONTROL COMPARTMENTS. DISCONNECT FROM BRANCH BEFORE SERVICING. FAILURE TO DO SO CAN RESULT IN SERIOUS INJURY OR DEATH.**

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References

KLENZADE SALES CENTER ECOLAB. Inc.
370 Wabasha
St. Paul, Minnesota 55102
800/352-5326 or 612/293-2233

NATIONAL FIRE PROTECTION ASSOCIATION
60 Battery March Park
Quincy, Massachusetts 02269

NFPA/70 - The National Electrical Code

ECONOMICS LABORATORY, INC.
St. Paul, Minnesota 55102

NATIONAL SANITATION FOUNDATION
3475 Plymouth Rd.
Ann Arbor, Michigan 48106

UNDERWRITERS LABORATORIES, INC.
333 Pfingsten Road
Northbrook, Illinois 60062

ZEP MANUFACTURING CO.
1310-T Seaboard Industrial Blvd.
Atlanta, Georgia 30318

1.0 Equipment Description

Groen Model EE is a floor-mounted, stationary, steam-jacketed kettle which has a thermostatically controlled, self-contained, electrically-heated steam supply and appropriate controls, mounted on a sturdy base. Heat produced by electric heating elements boils water in a reservoir below the jacket to produce steam under pressure.

The kettle is surrounded by air-insulated stainless steel sheathing. Stainless steel panels enclose all of the controls. Three stainless steel, tubular legs support the unit.

EE kettles are available in 20, 40, 60 and 80 gallon capacities. Kettle bodies are welded into one piece. Models are all equipped with a two inch (50 mm) sanitary tangent draw-off (product faucet) valve and a stainless steel strainer. This standard draw-off uses a compression disc valve. The unit is controlled with a thermostat, which turns electric power on or off, and sets the cooking temperature. Instruments are provided to show what is happening inside the unit:

- *Water gauge glass*: Shows the level of water within the steam jacket
- *Pressure/vacuum gauge*: Shows the steam pressure and if there is air in the jacket
- *Indicator lamp*: Lights when the kettle is being heated

Automatic controls within the unit:

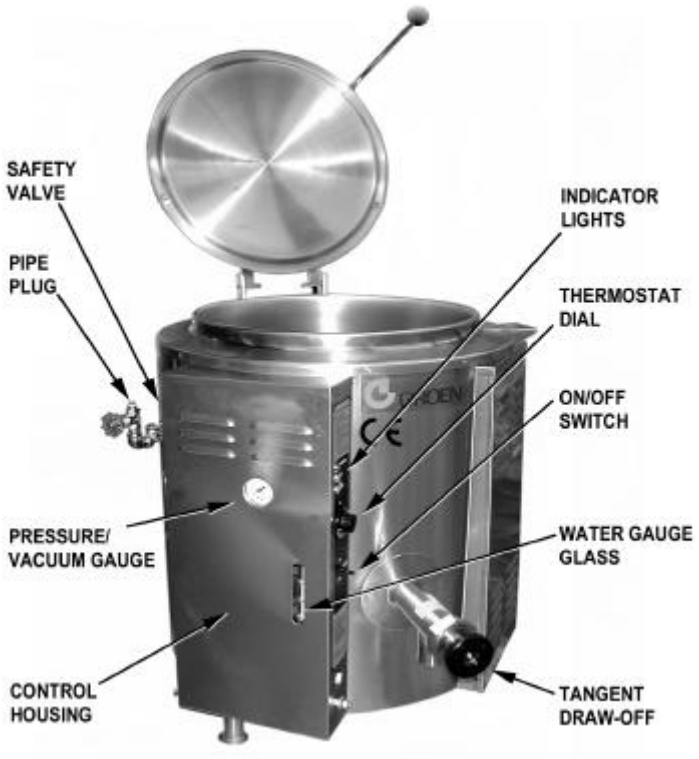
- *Contactor*: Controlled by the thermostat, turns heating element power on or off
- *Low-water cutoff*: Turns off power to keep heating elements from overheating if water loss exposes them above the water level
- *Safety valve*: Releases steam if jacket pressure gets too high

The jacket is filled at the factory with treated water . When air is removed from the jacket, the kettle efficiently provides a uniform heating temperature range of 150 to approximately 270°F (65 to 132°C). This range allows the kettle to be used for warming, simmering, boiling or braising.

The interior of the kettle is polished to a 180 emery grit finish and the exterior is given a uniform Number 4 finish. The unit is ASME shop inspected and registered with the National Board for working pressures up to 30 PSIG (206 kPa).

Optional equipment for the EE and AE kettles includes:

- Three inch(75 mm) draw-off valve
- Perforated or solid disc strainer
- Basket inserts (TRI-BC)
- Water fill faucets
- Automatic water filler
- Kettle brush kit
- 316 stainless steel liner



KETTLE CHARACTERISTICS				
	EE-20	**EE-40**	**EE-60**	**EE-80**
Capacity	20 gal (75 l)	40 gal (150 l)	60 gal (226 l)	80 gal (300 l)
Diameter	26 in (66 cm)	32 in (81 cm)	36 in (91 cm)	38 in (96.5 cm)
Rim Height	37 in (94 cm)	37 in (94 cm)	40 in (102 cm)	44 in (112 cm)
Total Width	26 in (66 cm)	32 in (81 cm)	36 in (91 cm)	38 in (96.5 cm)
Front to Back	38¼ in (97 cm)	48¼ in (123 cm)	47¼ in (120 cm)	49¼ in (125 cm)

2.0 Inspection & Unpacking

The unit will arrive in a heavy shipping carton and will be banded to a skid. Immediately upon receipt, inspect the carton carefully for exterior damage.

CAUTION
SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT. TAKE CARE TO AVOID PERSONAL INJURY OR DAMAGE TO THE UNIT BY STAPLES LEFT IN THE WALLS OF THE CARTON.

Carefully cut any polyester straps around the carton and detach the sides of the box from the skid. Pull the carton up off the unit.

Thoroughly inspect the unit for concealed damage. Report any shipping damage or incorrect shipments to the delivery agent.

Write down the model number, serial number, and installation date, and retain this information for future reference. Space for these entries is provided at the top of the Service Log at the back of this manual.

Keep this manual on file and available for operators to use.

CAUTION
THIS UNIT IS VERY HEAVY. INSTALLER SHOULD OBTAIN HELP AS NEEDED TO LIFT THIS WEIGHT SAFELY.

When installation is to begin, carefully cut any straps which hold the unit on the skid. Lift the unit straight up off the skid. Examine packing materials to be sure that loose parts are not discarded with the materials.

The unit will arrive in a heavy carton.

Inside it will be banded to a skid.

3.0 Installation

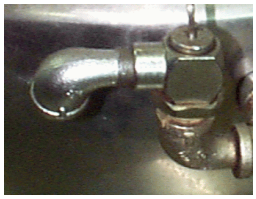
The Groen Kettle is provided with complete internal wiring and is ready for immediate connection. Wiring diagrams are provided in this manual and on the inside of the control housing service panel. Any mechanical or electrical changes must be approved by Groen's Food Service Engineering Department.

WARNING
INSTALLATION OF THE KETTLE MUST BE DONE BY PERSONNEL QUALIFIED TO WORK WITH ELECTRICITY. IMPROPER INSTALLATION CAN RESULT IN INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT.

The completed unit has been operated at the factory to test all controls and heater elements.

3.1 Set the kettle in place and level it by turning the bullet feet to adjust leg length. Allow clearance around the unit for cleaning, maintenance and service.

3.2 Confirm that the jacket water level is above the mid point of the gauge glass. If the level is low, follow the instructions under "Jacket Filling and Water Treatment," Page 12.

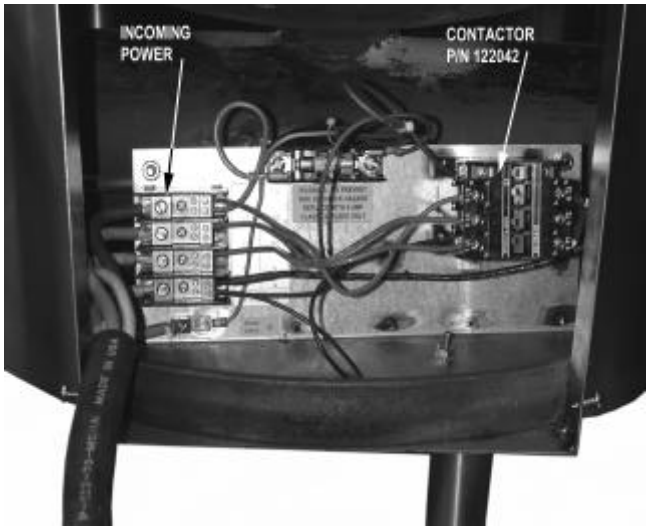


3.3 The open end of the elbow on the outlet of the safety valve must face downward. If it does not, turn it to the correct position.

3.4 Provide electrical power specified on the equipment electrical information plate. Observe local codes and/or The National Electrical Code in accordance with ANSI/NFPA 70 - (current edition).

3.5 The equipment is shipped ready for three phase operation. Refer to the wiring diagram for single phase operation.

3.6 Bringing the electrical service through the entrance at the rear of the support housing with one inch(35 mm) conduit, making a watertight connection with the incoming lines. Incoming power connections are made at the terminal block. Observe local codes and/or the National Electrical Code in compliance with ANSI/NFPA 70 (latest edition). When there is a choice between applicable codes, Groen recommends following the more stringent code. (A BX connection is **not** recommended.)



DANGER
ELECTRICALLY GROUND THE UNIT AT THE TERMINAL PROVIDED. FAILURE TO GROUND UNIT COULD RESULT IN ELECTROCUTION AND DEATH.

3.7 Equipotential Terminal - In accordance with national regulations, the unit has been fitted with an equipotential terminal.

The equipotential terminal is located near the bottom of the Control Panel.

3.8 Check the following to confirm that your kettle is properly installed:

- The kettle is level
- The correct amount of water is in the kettle jacket
- Safety valve is pointed down
- Unit is connected with a waterproof electric power supply of the proper voltage, phase and amperage rating
- Room for cleaning and servicing

ELECTRICAL SPECIFICATIONS*

	EE-20		EE-40		EE-60		EE-80	
	KW	AMP	KW	AMP	KW	AMP	KW	AMP
230 Volts-Single Phase	12	48	24	96	N/A		N/A	
400 Volts-Three Phase	12	48	24	96	36	143	36	143

4.0 Initial Start-Up

IMPORTANT:

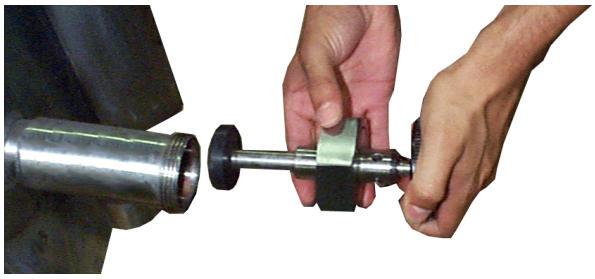
BE SURE ALL OPERATORS READ, UNDERSTAND AND FOLLOW THE OPERATING INSTRUCTIONS, CAUTIONS AND SAFETY INSTRUCTIONS CONTAINED IN THIS MANUAL.

Now that the kettle has been installed, you should test it to ensure that the unit is operating correctly.

4.1 Remove all literature and packing materials from inside and outside of the unit.

4.2 Clean out any material which might clog or damage the draw-off (product outlet).

4.3 Install the draw-off valve (packed separately) by sliding the assembly into the tangent and hand-tightening the large stainless steel nut.



Slide the assembly into the tangent and hand-tighten the large stainless steel nut.

4.4 Turn on the electrical service to the unit.

4.5 Pour water into the kettle until it is about six inches deep (150 mm).

4.6 Test draw-off valve operation by opening it all the way, then closing it before all the water runs out.

4.7 Following “To Start Kettle” instructions in the “Operation” section of this manual, begin heating the water at the highest thermostat setting. The heating indicator light should come on immediately, and heating should continue until the water boils.

WARNING

AVOID ALL DIRECT CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

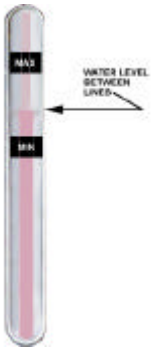
AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

4.8 To shut down the unit, turn the thermostat dial to “OFF”.

If the unit functions as described above, it is ready for use. If the unit does not function as described, contact your local Groen Certified Service Agency.

5.0 Operation

The operator controls kettle heating with the thermostat dial. The dial turns heating element power on or off and sets the kettle operating temperature.



Each day, confirm the jacket water level by checking the water gauge.

A. To Start Kettle

5.1 EE kettles have three Indicator Lights on the Control Panel:

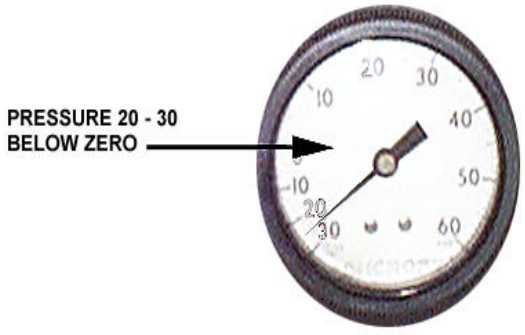
- Power Light - Indicates that power is being supplied to the unit
  Heat Light - Indicates that power is being applied to the heater elements
- Low Water Light - Indicates that water level is too low, and that corrective action is required.

5.2 EE kettles are equipped with a Water Level Switch, mounted on a bracket above and forward of the kettle Pressure Gauge and water gauge sight glass, inside the control box. This switch monitors water level and turns on the low water light to signal the need for additional water in the kettle jacket.

5.3 EVERY DAY make sure the jacket water level is between the marks on the gauge glass. If the level is too low, see “Jacket Filling and Water Treatment” on page 12.

5.4 While the kettle is cold, check the pressure gauge. If the gauge does not show 20 to 30 inches of vacuum (that is, a reading of 20 to 30 below 0), see “Jacket Vacuum” on page 11.

5.5 Make sure that the strainer covers the draw-off valve outlet at the bottom of the kettle. This keeps food solids from collecting in the draw-off area.



Be sure that the pressure/vacuum gauge shows at least 20 inches of vacuum.

5.6 Turn the thermostat dial to the desired setting. The indicator light will confirm that the kettle is heating. Cycling of the light on and off shows that the kettle is being held at the set temperature. **Once in each cycle contactors in the support housing will make a clicking sound. This is normal.**

5.7 To Transfer Product or Empty Kettle:

5.7.1 The kettle is emptied by means of its draw-off valve, by ladling product out, or with the optional tri-basket insert.

WARNING
OPEN THE KETTLE LID CAREFULLY TO AVOID STEAM WHICH MAY ESCAPE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

CAUTION
DO NOT OVERFILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS AT LEAST 2-3” (5-8 cm) BELOW THE KETTLE BODY RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING PRODUCT AND SAFE TRANSFER.

CAUTION
KEEP FLOORS IN FRONT OF THE KETTLE WORK AREA CLEAN AND DRY. IF SPILLS OCCUR, CLEAN AT ONCE TO AVOID SLIPS OR FALLS.

5.7.2 Use of Optional Basket Insert

The optional kettle basket insert set will assist in cooking water-boiled products such as eggs, potatoes, vegetables, shell fish, pasta and rice. The nylon mesh liner must be used for products smaller than the basket mesh size, (approximately 1/4” (6 mm). This includes rice and small pasta shapes.

Tips For Use.

a) Allow for displacement of the three baskets and product. This may mean only filling the kettle half way. Test baskets and product displacement with the kettle OFF, and with cold water in the kettle.

CAUTION
DO NOT OVERFILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS AT LEAST 2-3" (5-8 cm) BELOW THE KETTLE RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING AND SAFE PRODUCT TRANSFER.

WARNING
AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

b) Load baskets on a level, stable work surface.

c) Lift loaded baskets with both hands. Get help from another person if the basket is too heavy for safe handling.

d) Slowly lower product into kettle and securely hook the basket to the "Y" frame.

e) When removing baskets with cooked product, lift straight up, ensuring basket bottoms clear the kettle rim. Wear protective oven mitts and protective apron.

f) Allow hot water to fully drain from product, before moving basket away from the kettle. Do not rest baskets on kettle rim or pouring lip. If baskets are too heavy for one individual to lift and safely move, get help. Remove product immediately from basket into another container, being sure to avoid contact with hot product and hot basket **or**:

g) Place baskets with food on a stable, flat surface, inside a solid steamer or bake pan, to catch any remaining hot water draining from product.

5.8 To Turn Off the Kettle

5.8.1 Turn the thermostat dial to "OFF."

5.8.2 Before the unit is serviced, or if it will be off for a week or more:

a) Set the thermostat to "OFF."

b) Turn off electric power to the unit at the circuit breaker or fuse.

6.0 Sequence of Operation

The following "action-reaction" outline is provided to help the user understand how the equipment works.

When the operator starts up the kettle by turning the operating thermostat dial from "OFF" to a desired setting, the thermostat switch closes. This lights up the heating indicator light and causes the contactors to close, allowing power to flow to heating elements.

When the temperature of the steam jacket reaches the value corresponding to the dial setting, the thermostat switch opens. This turns off the heating indicator light and causes the contactors to open, cutting the power to the heaters.

As soon as the thermostat senses that the kettle is cooling below the set point, the thermostat switch closes, the heating indicator light comes on, the contactors close, and the heaters come on again. On-off cycling continues, keeping the kettle at the set temperature. This is why the heating indicator light cycles on and off during normal operation.

If steam pressure greater than 30 PSIG is generated in the jacket, the safety valve will open and relieve the excess pressure.

If the jacket water level gets too low before the heating elements overheat, the high-limit control will open and shut off power to the elements until the kettle cools.

Setting the operating thermostat dial to "OFF" shuts down all control and heating circuits.

7.0 Maintenance

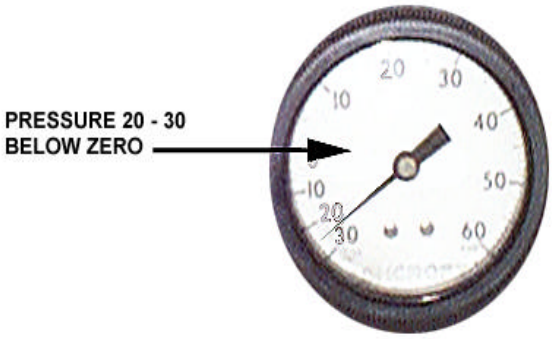
NOTICE: Contact Groen or an authorized Groen representative when repairs are required.

7.1 Periodic Maintenance

A Maintenance & Service Log is provided at the back of this manual with the warranty information. Each time maintenance is performed on your Groen kettle, enter the date on which the work was done, what was done, and who did it. Keep this manual on file and available for operators to use.

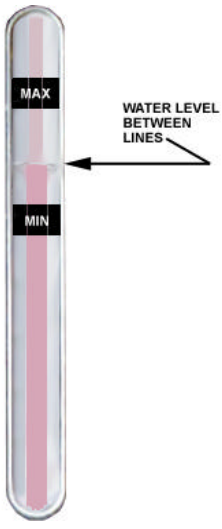
Periodic inspection will minimize equipment down time and increase the efficiency of operation. The following points should be checked:

a. Check the pressure/vacuum gauge every day. The gauge should show a vacuum of 20 to 30 inches, when the kettle is cold. If it does not, see "Jacket Vacuum" below.



Be sure that the pressure/vacuum gauge shows at least 20 inches of vacuum.

b. Also check the jacket water level every day. It should be between the marks on the gauge glass. If the level is low, see "Jacket Filling and Water Treatment" on page 12.



c. Test the safety valve at least twice each month. Test the valve with the kettle operating at 15 psi (105 kPa), by pulling up the test valve chain for at least 5 seconds. Then release the lever and let the valve snap shut. If the valve does not activate, or there is no evidence of discharge, or the valve leaks, stop using the kettle and contact a qualified Groen service representative.

WARNING
WHEN TESTING, AVOID ANY EXPOSURE TO THE STEAM BLOWING OUT OF THE SAFETY VALVE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

7.2 Jacket Vacuum

Test the safety valve at least twice monthly.

When the kettle is cold, a positive pressure/ vacuum gauge reading or a reading near zero indicates that there is air in the jacket. Air in the jacket slows kettle heating.

To remove air:

a. Start the unit. (Be sure there is water or product in the kettle when heating).

b. Make sure that the elbow of the safety valve outlet is turned so that escaping steam is directed toward the floor.

c. When the pressure/vacuum gauge reaches a positive pressure reading of 5 PSIG, release the trapped air and steam by pulling up or out on the safety valve lever or ring for about 1 second. Repeat this step, then let the pull ring or valve lever snap back into the closed position.

WARNING
STAY AWAY FROM THE STEAM THAT IS BLOWING OUT OF THE SAFETY VALVE. THE STEAM CAN CAUSE A SEVERE BURN.

7.3 Jacket Filling and Water Treatment

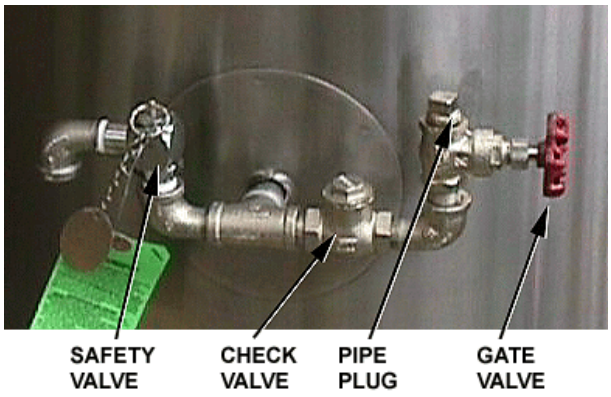
The jacket was charged at the factory with the proper amount of treated water. You may need to restore this water because it was lost as steam during venting or by draining.

a. If you are replacing water lost as steam, use distilled water. If you are replacing treated water that ran out of the jacket, prepare more treated water as directed in step 7.4, "Water Treatment Procedure." **Do not use tap water.**

b. Allow the kettle to cool. Remove the pipe plug from the jacket fill assembly.

c. Open the gate valve and pour in the distilled or treated water.

d. Hold the safety valve open to allow air to escape from the jacket while you pour in the water. Continue to pour until the water level rises to a point between the marks on the gauge glass.



e. Any air introduced into the jacket during filling must be removed to obtain efficient heating. See "Jacket Vacuum" above.

7.4 Water Treatment Procedure

a. Obtain water treatment compound and a pH test kit from your Groen distributor.

WARNING
TO AVOID INJURY, READ AND FOLLOW ALL PRECAUTIONS STATED ON THE LABEL OF THE WATER TREATMENT COMPOUND.

b. Fill a mixing container with the measured amount of water required. (See table). Use distilled water only.

Kettle Model	Jacket Capacity
EE-20	3¼ Gallons
EE-30	4½ Gallons
EE-60	7¾ Gallons
EE-80	10 Gallons

c. Hang a strip of pH test paper on the rim of the container, with about 1 inch (25 mm) of the strip below the surface of the water.

d. Measure the water treatment compound (One way to do this is to add the compound from a measuring cup.)

e. Stir the water continuously, while you slowly add water treatment compound, until the water reaches a pH between 10.5 and 11.5. Judge the pH by frequently comparing the test strip color with the color chart provided in the pH test kit. If you are color blind have a person who is not color blind read the test strip color level.

f. Record the exact amounts of water and treatment compound used. These amounts may be used again, if the same water sources and compound are used in the future. However, it is best to check the pH each time treated water is prepared.

8.0 Cleaning

8.1 Suggested Tools:

a. Cleaner, such as Klenzade HC-10 or HC-32 from ECOLAB, Inc.

b. Kettle brushes in good condition (and a bottle brush, for the draw-off).

c. Sanitizer such as Klenzade XY-12.

d. Film remover such as Klenzade LC-30.

8.2 Precautions

Before cleaning, shut off the kettle by turning the thermostat dial to “OFF,” and shut off all electric power to the unit at a remote switch, such as the circuit breaker.

WARNING
KEEP WATER AND SOLUTIONS AWAY FROM CONTROLS AND ELECTRICAL EQUIPMENT. NEVER SPRAY THE SUPPORT HOUSING OR ELECTRICAL CONNECTIONS.

CAUTION
MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES, AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN. WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD, AND PROTECTIVE CLOTHING. READ THE WARNINGS AND FOLLOW THE DIRECTIONS ON THE LABEL OF THE CLEANER CAREFULLY

8.3 Procedure

a. Clean food-contact surfaces as soon as possible after use. If the unit is in continuous use, thoroughly clean and sanitize the interior and exterior at least once every 12 hours.

b. Scrape and flush out food residues. Be careful not to scratch the kettle with metal implements. Close the draw-off.

c. Prepare a hot solution of the detergent/ cleaning compound as instructed by the supplier. Clean the unit thoroughly. A cloth moistened with cleaning solution can be used to clean controls, housings, and electrical conduits.

Use only a sponge, cloth or plastic brush to clean the kettle.

Scrapers or steel wool can harm the kettle surface.

d. Rinse the kettle thoroughly with hot water, then drain completely.

e. Disassemble the tangent draw-off valve. Clean the draw-off port and each valve part with a brush.

CAUTION
DO NOT MIX THE PARTS OF DIFFERENT DRAW-OFF ASSEMBLIES DURING WASHING. THE PARTS ARE NOT ALWAYS INTERCHANGEABLE.

f. Rinse the kettle and draw-off valve parts thoroughly with hot water, then drain completely.

g. As part of the daily cleaning program, clean soiled external and internal surfaces. Remember to check the sides of the unit and control housing.

h. To remove stuck materials, use a brush, sponge, cloth, plastic or rubber scraper, or plastic wool with the cleaning solution. To reduce effort required in washing, let the detergent solution sit in the kettle and soak into the residue. Do NOT use abrasive materials or metal tools that might scratch the surface. Scratches make the surface harder to clean and provide places for bacteria to grow.

   Do NOT use steel wool, which may leave particles in the surface and cause eventual corrosion and pitting.

i. The outside of the unit may be polished with a stainless steel cleaner such as "Zepper" from Zep Manufacturing Co.

j. When equipment needs to be sanitized, use a solution equivalent to one that supplies 200 parts per million available chlorine. Obtain advice on sanitizing agents from your supplier of sanitizing products. Following the supplier's instructions, apply the agent after the unit has been cleaned and drained. Rinse off the sanitizer thoroughly.

CAUTION

NEVER LEAVE A CHLORINE SANITIZER IN CONTACT WITH STAINLESS STEEL SURFACES LONGER THAN 30 MINUTES. LONGER CONTACT CAN CAUSE STAINING AND CORROSION.

k. It is recommended that each piece of equipment be sanitized just before use.

l. If there is difficulty removing mineral deposits or a film left by hard water or food residues, clean the kettle thoroughly and then use a deliming agent, like Groen Delimer/Descaler (Part Number 114800) or Lime-A-Way® from Ecolab, in accordance with the manufacturer's directions. Rinse and drain the unit before further use.

m. If cleaning problems persist, contact your cleaning product representative for assistance.

9.0 Troubleshooting

Your Groen kettle is designed to operate smoothly and efficiently if properly maintained. However, the following is a list of checks to make in the event of a problem. Wiring diagrams are furnished inside the service panel and in this manual. **If an item on the list is followed by X, the work should be done by a qualified service representative.**

USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY GROEN OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.

SYMPTOM	WHO	WHAT TO CHECK
Kettle will not heat, and heating indicator will not come on.	User	a. Electric power supply to the unit. b. Water level in jacket. c. Control circuit fuses in the control console. **REPLACE BLOWN FUSES ONLY WITH A FUSE OF THE SAME AMP RATING.** A HIGHER RATED FUSE WILL NOT PROTECT THE UNIT OR THE BUILDING.
	Auth Service Rep Only	d. For loose or broken wires. X e. Operation of variable thermostat. X f. Low water cutout switch. X g. Water probe.X h. That high limit pressure switch is closed. X

SYMPTOM	WHO	WHAT TO CHECK
Kettle will not heat, but heating indicator comes on.	User	a. For air in the jacket. See “Jacket Vacuum” in the Maintenance section of this manual.
	Auth Service Rep Only	b. Contactor. X c. Heater elements with ohmmeter for ground short or open element. If element is defective, call Groen. X
Kettle continues heating after it reaches the desired temperature	User	a. Thermostat dial setting.
	Auth Service Rep Only	b. Thermostat circuit for short. X c. Thermostat calibration.X d. Thermostat operation. The thermostat should click when the dial is rotated above and below the setting for the temperature of the kettle. X e. Contactor, to determine whether it is energized or stuck.X
Kettle stops heating before it reaches the desired temperature.	User	a. Thermostat dial setting. b. Jacket water level.
	Auth Service Rep Only	c. Thermostat calibration. X d. Thermostat operation. The thermostat should click when the dial is rotated above and below the setting for the temperature of the kettle. X e. Pressure limit switch.X
Kettle heats slowly	User	a. For air in the jacket. See “Jacket Vacuum” in the Maintenance section of this manual.
	Auth Service Rep Only	b. Heater elements with ohmmeter for ground short or open element. If an element is defective, call Groen. X c. Voltage of main power source. X
Safety valve pops.	User	a. For air in the jacket. See “Jacket Vacuum” in the “Maintenance” section of this manual. b. Whether kettle was being heated empty when valve popped.
	Auth Service Rep Only	c. Pressure limit switch. X d. Thermostat operation. Thermostat should click when the dial is rotated above and below the setting for the temperature of the kettle. X e. Safety valve. If the valve pops at pressures below 48 PSI, replace it. X f. Contactor, to determine whether it is de-energized. X
Safety valve leaks a small amount of steam when the kettle is operating.	User	a. For contamination that prevents seating of valve. With full pressure in the jacket, pull the chain all the way briefly to blow the valve clean, then let it snap back to seat the valve.
	Auth Service Rep Only	b. Safety valve for defects. **Replace** any defective valve with an **identical** valve.X

10.0 Parts List

(Keyed to Drawings and Photographs on the Following Pages)

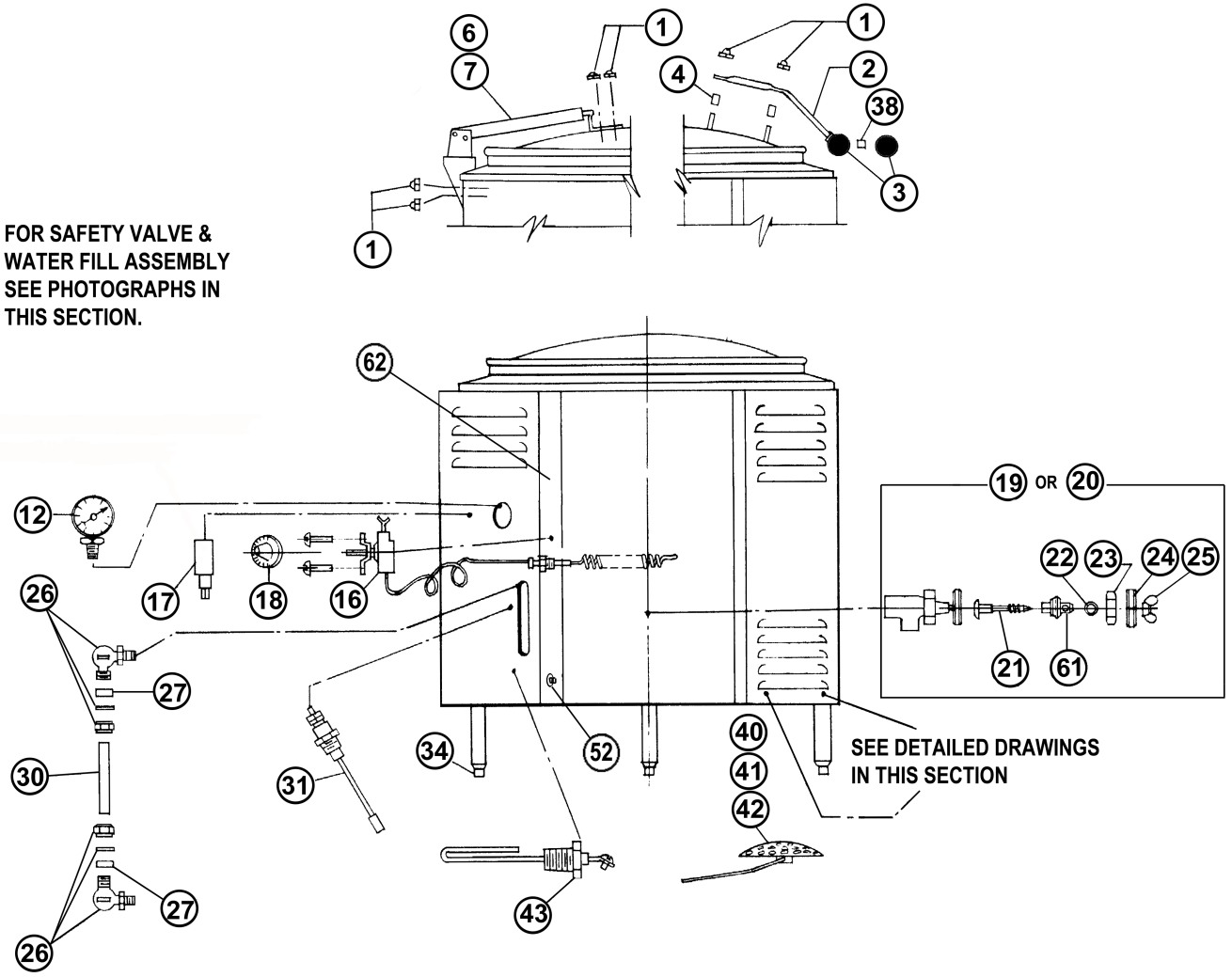
To order parts, contact your Groen Certified Service Agency. Supply the model designation, part description, part number, quantity and, where applicable, voltage and phase.

Key	Description	Part No.
1	¼"-20 N.C. Cap Nut	048501
2	Handle (40 Gal. & smaller kettles)	047552
3	Knob (Friction)	012691
4	Spacer - 60 & 80 gallon	012733
4	Spacer - 20 & 40 gallon	002378
5	Fuse Block	0077840
6	Actuator Cover (60 Gal.)	012520
7	Actuator Cover (80 Gal.)	012521
11	30 Lb. Safety Valve	097009
12	Pressure Gauge	099156
13	Fuse - 6 Amp	122043
14	Contactor	122042
15	Safety Valve & Water Fill Assembly	097010
16	Thermostat	012313
17	Pressure Limit Control	108559
18	Thermostat Knob	122000
19	1½" Draw-Off Valve, Complete	009000
20	2" Draw-Off Valve, Complete	009046
21	Valve Stem - 2"	009048
21	Valve Stem - 1-1/2"	009027
22	Rubber "O" Ring	009034
23	Sanitary Hex. Nut #13H - 1-1/2"	008911
23	Sanitary Hex. Nut #13H - 2"	009354
24	Valve Handle	009029
25	Wing Nut	009028
26	½"Gauge Glass Connector Assy.	004071
27	Rubber Gauge Glass Gasket	008917
30	Water Gauge Glass	008742
31	Warrick Electrode	074665
34	Bullet Foot Assembly	002479
38	Tolerance Ring	012692
40	Removable Strainer 9" Dia 1/4" holes 1-1/2" Tangent Draw-Off	009007
40	Removable Strainer 9" Dia 1/4" holes 2" Tangent Draw-Off	009044
41	Removable Strainer 9" Dia 1/8" holes 1-1/2" Tangent Draw-Off	009040
41	Removable Strainer 9" Dia 1/8" holes 2" Tangent Draw-Off	013785
42	Removable Strainer 9" Dia no holes 1-1/2" Tangent Draw-Off	009057
42	Removable Strainer 9" Dia no holes 2" Tangent Draw-Off	013783
43	Single Heater Element 240V-4000W	008851
48	Power Light	116381
49	Heat Light	116382
50	Low Water Light	116382
51	Power Switch	122004
52	Equipotential Terminal Assembly	122021
53	Water Level Switch	117737
54	Base for Water Level Switch	117738
55	Bracket for Water Level Switch	122057
56	Terminal Block	096810
57	Ground Lug	119829
58	Hinge Bracket Bar	013485
59	Hinge "U" Bracket	061012
60	Water Fill Assembly	097007
61	Bonnet, Valve - 1-1/2"	009024
61	Bonnet, Valve - 2"	009047
62	Overlay, EE-20	132056
62	Overlay, EE-40 & 60	122036
63	Wiring Harness - Heater	122072
64	Wiring Harness - Control (EE-20)	122073
64	Wiring Harness - Control (EE-40)	123440
64	Wiring Harness - Control (EE-60)	127648

10.0 Parts List

(Keyed to Parts List on Page 16)

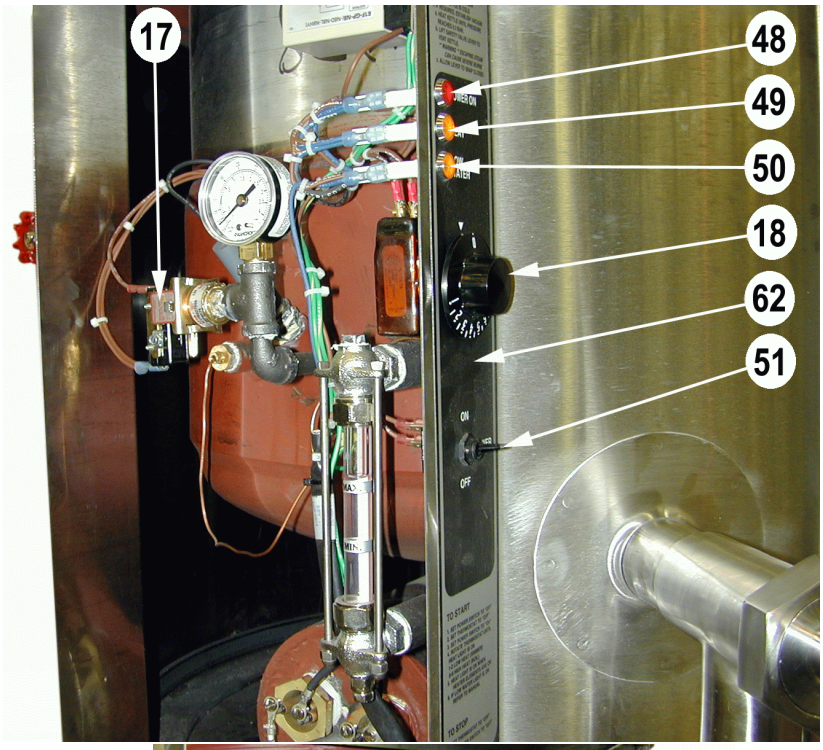
To order parts, contact your Groen Certified Service Agency. Supply the model designation, part description, part number, quantity and, where applicable, voltage and phase.

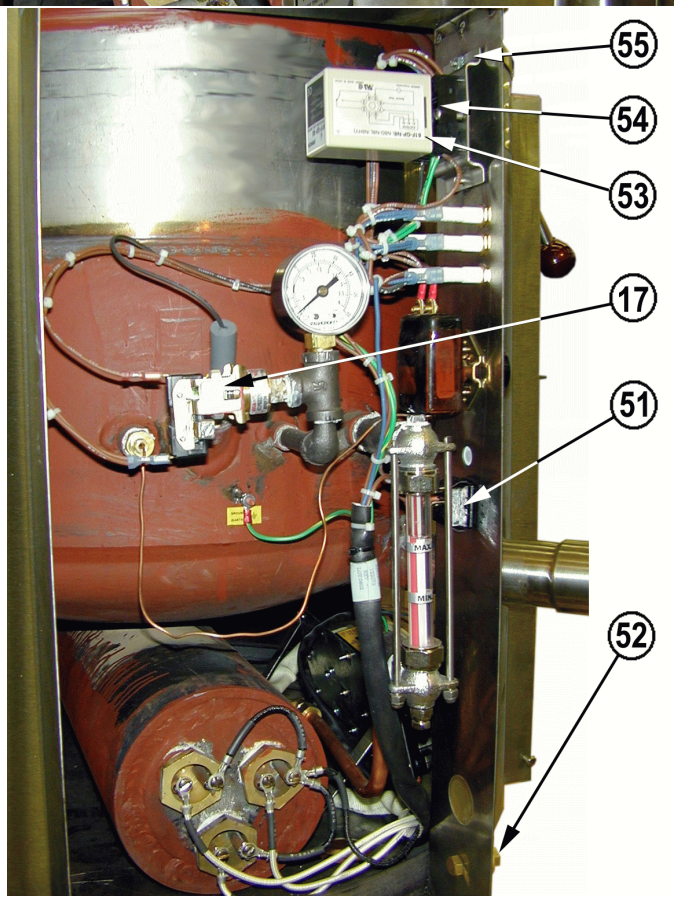


10.0 Parts List

(Keyed to Parts List on Page 16)

To order parts, contact your Groen Certified Service Agency. Supply the model designation, part description, part number, quantity and, where applicable, voltage and phase.

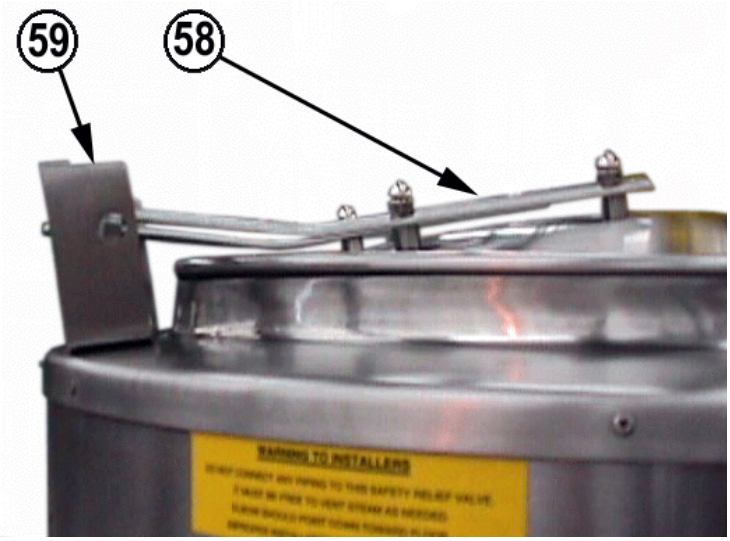


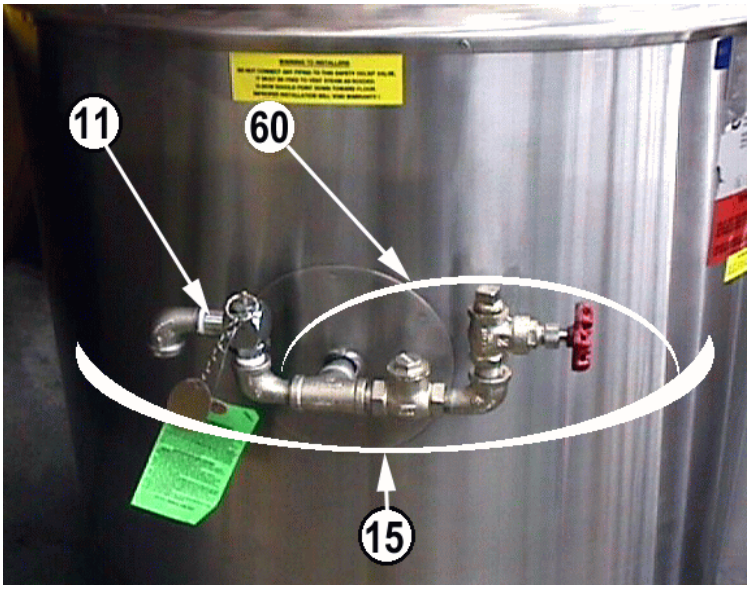


10.0 Parts List

(Keyed to Parts List on Page 16)

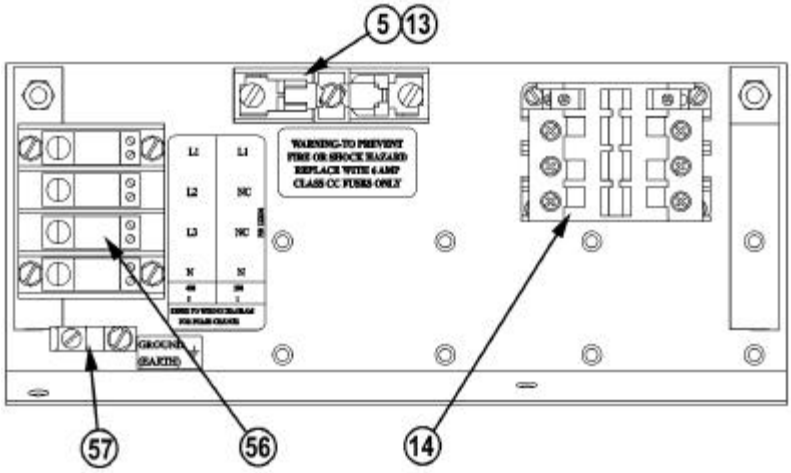
To order parts, contact your Groen Certified Service Agency. Supply the model designation, part description, part number, quantity and, where applicable, voltage and phase.



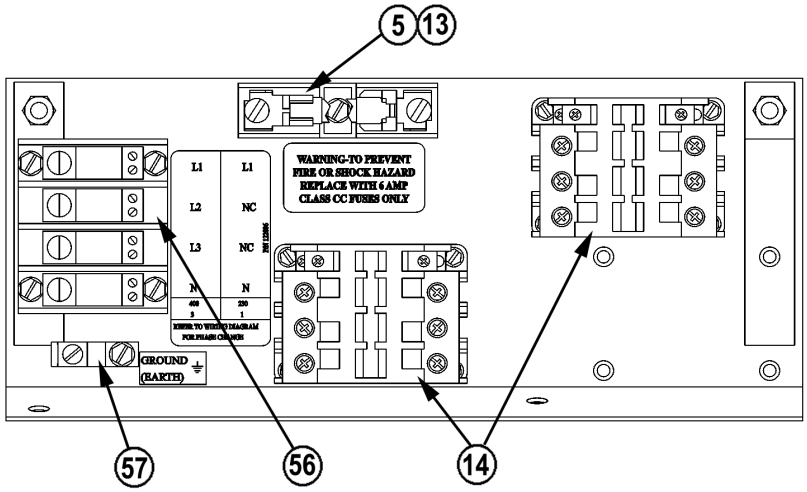


10.0 Parts List

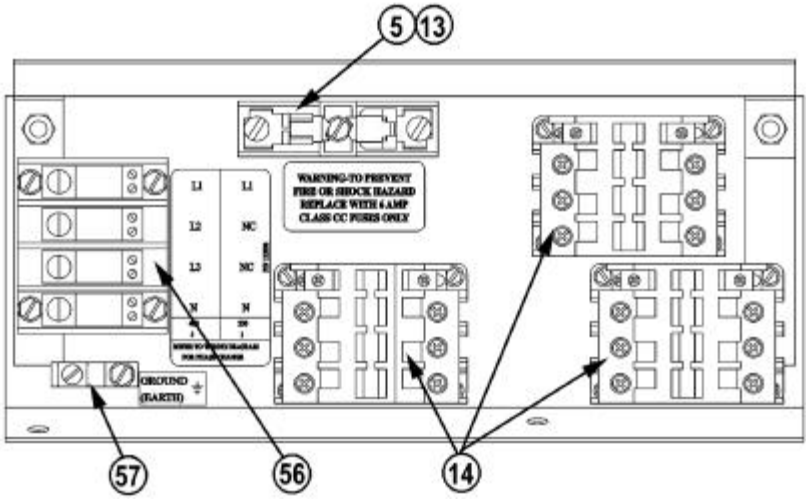
(Electrical Panel Assemblies - Keyed to Parts List on Page 16)



Model EE-20

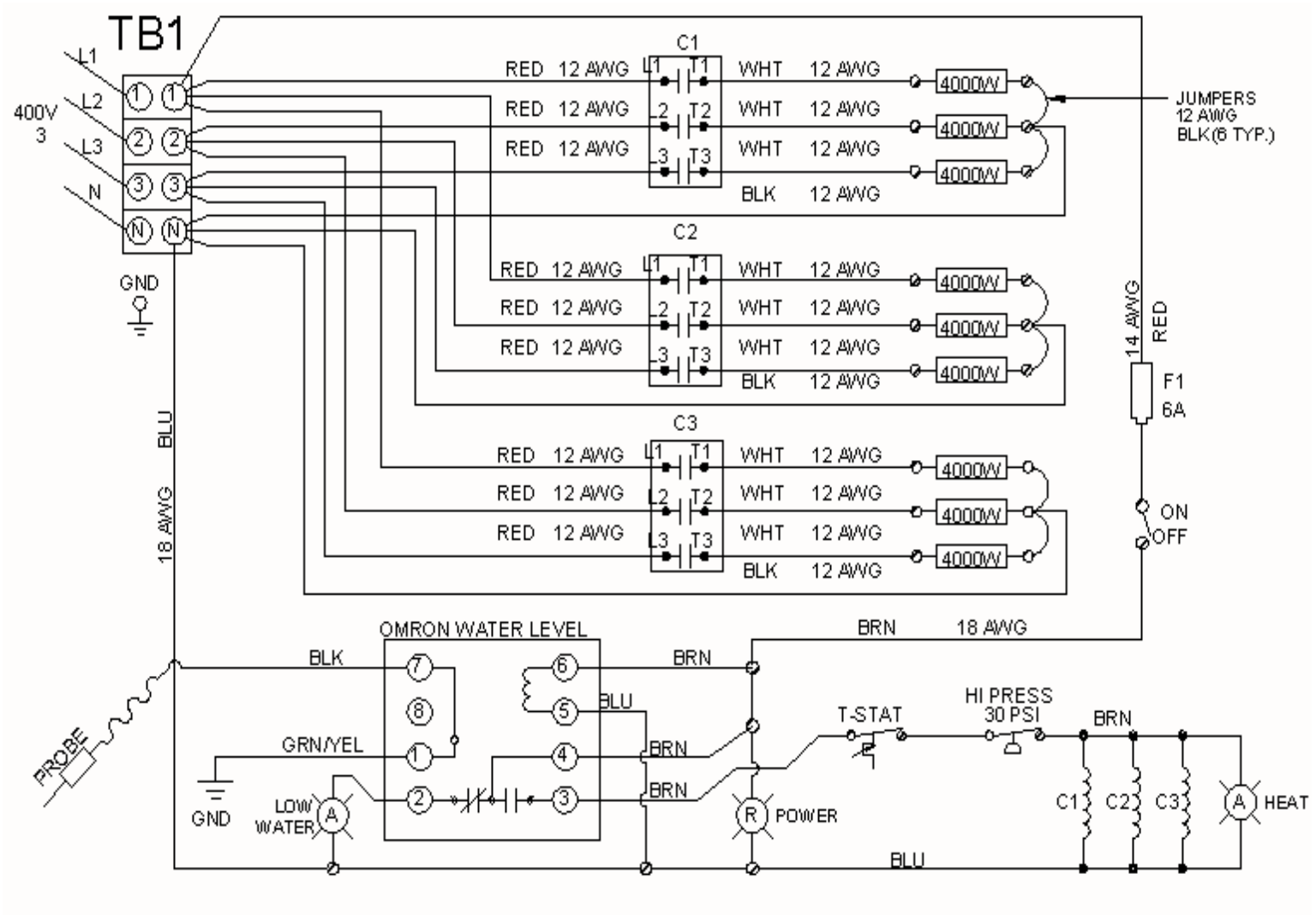


Model EE-40

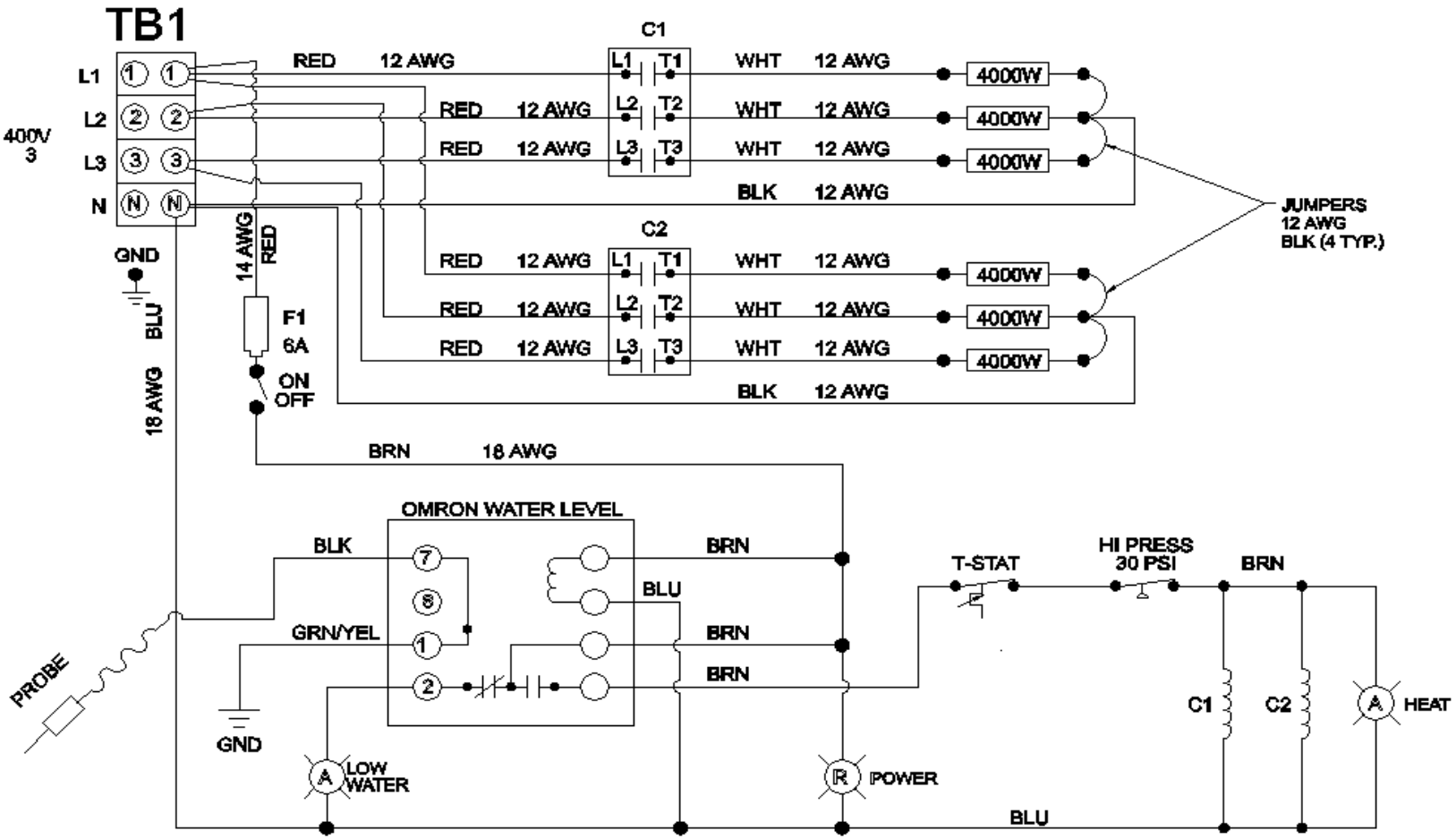


Models EE-60 & 80

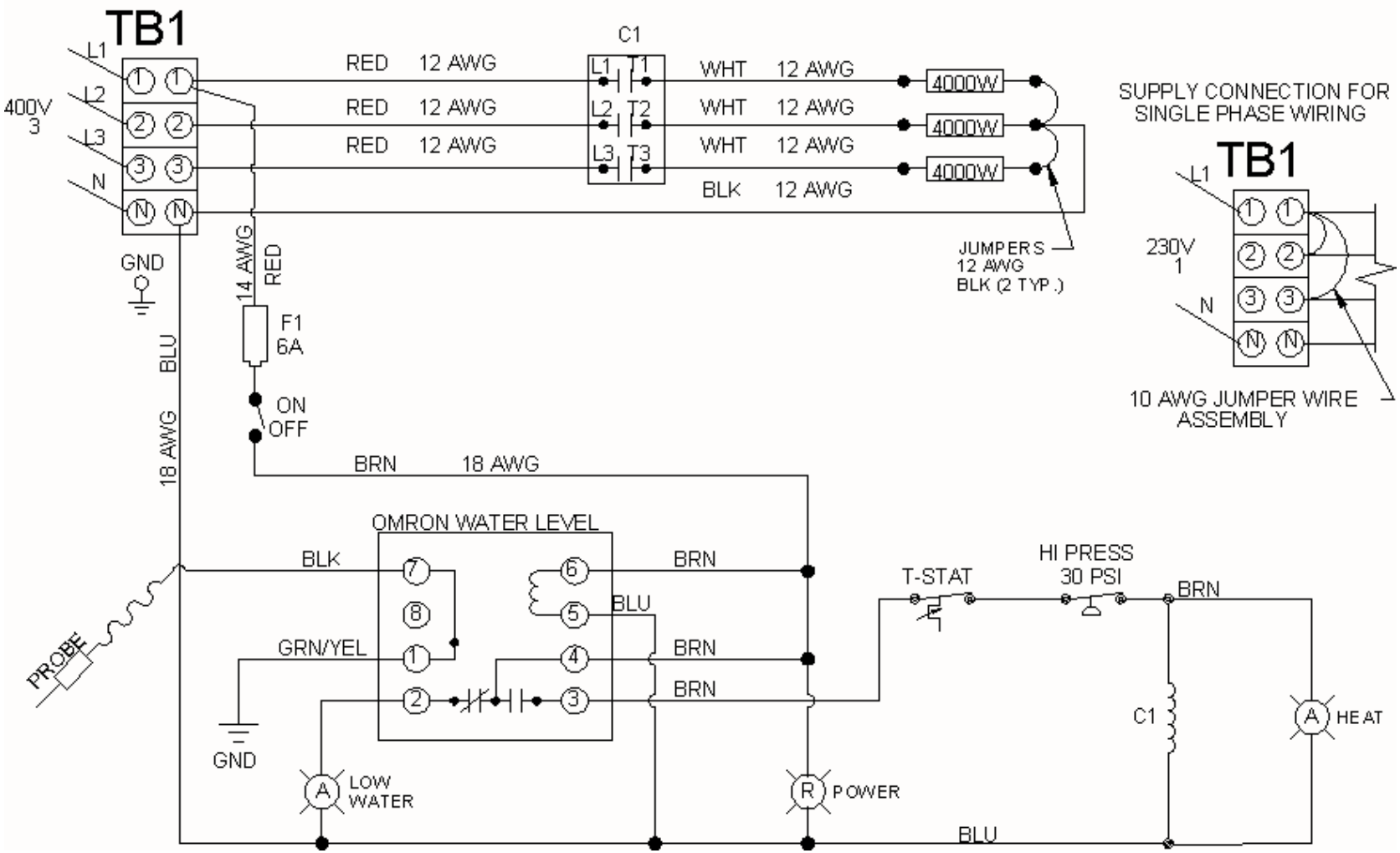
11.0 Electrical Schematic - EE-60 & EE-80



11.0 Electrical Schematic - EE-40



11.0 Electrical Schematic - EE-20



Service Log

Model No. _____ Purchased From _____

Serial No. _____ Location _____

Date Purchased _____ Date Installed _____

Purchase Order No. _____ For Service Call _____

Date	Maintenance Performed	Performed by

*Limited Warranty To Commercial Purchasers**

(for Areas Outside of the U.S. and Canada)

Groen Foodservice Equipment ("Groen Equipment") has been skillfully manufactured, carefully inspected and packaged to meet rigid standards of excellence. Groen warrant their Equipment to be free from defects in material and workmanship for (12) twelve months, with the following conditions and subject to the following limitations.

I. This parts and labor warranty is limited to Groen Equipment sold to the original commercial purchaser/ users (but not original equipment manufacturers), at its original place of installation, in areas outside the U.S. and Canada.

II. Damage during shipment is to be reported to the carrier, and is not covered under this warranty, and is the sole responsibility of the purchaser/user.

III. Groen, or an authorized service representative, will repair or replace, at Groen's sole election, any Groen Equipment, including but not limited to, draw off valves, safety valves, gas and electric components, found to be defective during the warranty period. As to warranty service in the territory described above, Groen will absorb labor and portal to portal transportation costs (time & mileage) for the first twelve (12) months from date of installation or fifteen (15) months from date of shipment from Groen.

IV. This warranty does not cover boiler maintenance, calibration, or periodic adjustments as specified in operating instructions or manuals, and consumable parts such as scraper blades, gaskets, packing, etc., or labor costs incurred for removal of adjacent equipment or objects to gain access to Groen Equipment. This warranty does not cover defects caused by improper installation, abuse, careless operation, or improper maintenance of equipment. This warranty does not cover damage caused by poor water quality or improper boiler maintenance.

V. THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EACH OF WHICH IS HEREBY EXPRESSLY DISCLAIMED. THE REMEDIES DESCRIBED ABOVE ARE EXCLUSIVE AND IN NO EVENT SHALL GROEN BE LIABLE FOR SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR THE BREACH OR DELAY IN PERFORMANCE OF THIS WARRANTY.

VI. Groen Equipment is for commercial use only. If sold as a component of another (O.E.M.) manufacturer's equipment or if used as a consumer product, such Equipment is sold AS IS and without any warranty.

*** (Covers All Food Service Equipment Ordered After October 1, 1995)**

UNIFIED BRANDS
FOODSERVICE EQUIPMENT SOLUTIONS
A DOVER COMPANY

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Part Number 127731
INTERNATIONAL
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